Statistical Analysis of Students' Learning Effectiveness in Online Courses Offered by British Partners in China-UK Joint Education Program

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Abstract: In the context of internationalization, China-UK Joint Education Programs are receiving increasing attention from universities. Based on the difficulties faced in China-UK Joint Education Program, this paper adopts a questionnaire survey method to study the learning effectiveness of students majoring in digital media technology in the China-UK Joint Education Program at Guangxi University of Finance and Economics, focusing on four aspects: learning materials, learning content, teacher conditions, and student learning outcomes. The research analysis in this paper not only provides strong support for the construction of China-UK Joint Education Program but also offers references for other China-UK Joint Education Programs.

Keywords: China-UK Joint Education Program; Online courses; Learning effectiveness

1. Introduction

In the context of internationalization, to further promote exchanges and cooperation between international and ASEAN countries, and make Guangxi gradually become a new highland for China's education opening to the outside world, it is significant to cultivate high-quality international talents. The digital media technology major in the China-UK Joint Education Program at Guangxi University of Finance and Economics has three sessions of enrolled students, with a total of six classes. From the second semester of the first year, each class begins to access professional courses offered by the British side. So far, a "3+1" teaching model for British professional courses has been initially formed, and courses have been co-constructed and explored with British teachers to innovate teaching models. However, British teachers face some difficulties in the teaching process. To better understand students' learning effectiveness, a survey questionnaire was distributed to students for statistical

analysis. This paper explores practical problems and solutions, investigates the innovation of teaching models for foreign professional courses in China-UK Joint Education Program in the new era, and aims to improve the teaching effectiveness of foreign professional courses in China-UK Joint Education Program.

2. Overview of research on China-UK Joint Education Program

Based on the practical difficulties faced by China-UK Joint Education Program in universities, scholars have mainly explored aspects such as teaching faculty, curriculum design, and teaching management. Lin *et al.* pointed out that some China-UK Joint Education institutions and projects unilaterally emphasize foreign language learning and all-English teaching, which has fueled the misguided perception of China-UK Joint Education as a "preparatory course for studying abroad" [1]. Through case studies, Li and Zhao found issues such as inadequate curriculum integration and an excessive number of foreign professional courses in China-UK Joint Education Program [2].

In response to the problems arising from the curriculum development of China-UK Joint Education Program in universities, some scholars have proposed corresponding optimization paths from various aspects such as curriculum design, teaching management, teaching faculty, and academic evaluation. He *et al.* suggested providing a set of English vocabulary specific to the field to help students build a solid foundation, guiding students in personalized key point extraction, and reviewing key points after class [3]. Xu *et al.* believed that China should learn from the advanced experience of foreign universities and evaluate students using a combination of formative and summative assessments [4]. Wang and Zhu proposed adopting an English "smart teaching" model to comprehensively develop students' language skills, critical thinking abilities, and self-directed learning capabilities through various institutional mechanisms [5]. Dong and Ni argued that China-UK Joint Education Program should focus on teaching faculty development, rapidly improving the level of the teaching team and talent cultivation capabilities by introducing a group of highly skilled and internationally minded experts and professors [6]. Liu proposed that in the post-pandemic era, with the increasingly complex global political and economic landscape and China's external development environment, it is necessary to reflect on how to strengthen and improve international exchanges and cooperation in higher education, enhance the quality and international influence of China-UK Joint Education Program, and deepen and expand mutually beneficial cooperation and exchanges in the field of higher education with countries around the world [7].

In summary, by considering the specific circumstances of the China-UK Joint Education Program in digital media technology and using comprehensive data, more scientific and objective management evaluations can be conducted, and personalized learning paths can be better planned [8]. However, several challenges remain.

(1) Dilemma between talent training goals and students' learning abilities: The implementation goal of China-UK Joint Education Program is to introduce high-quality foreign educational resources and cultivate talents with an international perspective and knowledge of international rules, which places high demands on students' learning abilities and foreign language proficiency. However, during project implementation, some students face challenges such as weak learning abilities, insufficient foreign language skills, and a lack of motivation. In particular, students who did not study English during their high school years face even greater learning pressures.

(2) Dilemma between students' learning preferences and curriculum design: Most students (especially those with weak foreign language skills) prefer or expect teachers to use Chinese or bilingual

instruction for better learning effectiveness. Currently, all foreign courses in this project are taught entirely in English, which has led to some students struggling to keep up with the learning pace.

(3) Contradiction between traditional teaching models and new technologies/methods: The teaching model for foreign professional courses primarily relies on introducing high-quality educational resources and having British teachers conduct classroom instruction. This traditional teaching model has become somewhat divergent from the new technologies and methods now mastered by students. Students prefer the use of new technologies and methods in foreign professional courses to address learning challenges. Moreover, as the skills required for digital media technology evolve with the times, students expect British courses to be updated in real time to align with international developments.

Based on these dilemmas, this paper proposes a "3+1" teaching model for foreign professional courses, which has been applied in teaching with certain characteristics and has achieved good results.

3. Current implementation status of the China-UK Joint Education Program

Starting from the actual situation of the school's China-UK Joint Education Program in digital media technology, and based on the Learning Pass teaching platform, we have worked with British teachers to jointly build teaching resources for foreign professional courses. Then, using this teaching resource platform, we aim to innovate the teaching model. The "3+1" teaching model for British professional courses is illustrated in **Figure 1**. This "3+1" teaching model consists of three stages: before, during, and after class, along with the assistance of a Chinese teaching assistant throughout the entire process. Before class, foreign teachers provide the teaching content and other learning materials. The teaching assistant then sets up the course on the Learning Pass platform for students to preview ahead of time. During class, foreign teachers conduct real-time online instruction and record the entire teaching process, while the teaching assistant participates in classroom teaching and provides guidance and assistance to students. After class, the teaching assistant assists the foreign teacher in posting the recorded classroom teaching videos on the Learning Pass platform, assigning homework, and providing tutoring to students. Students can complete corresponding tasks on the Learning Pass platform as well as review the class videos.
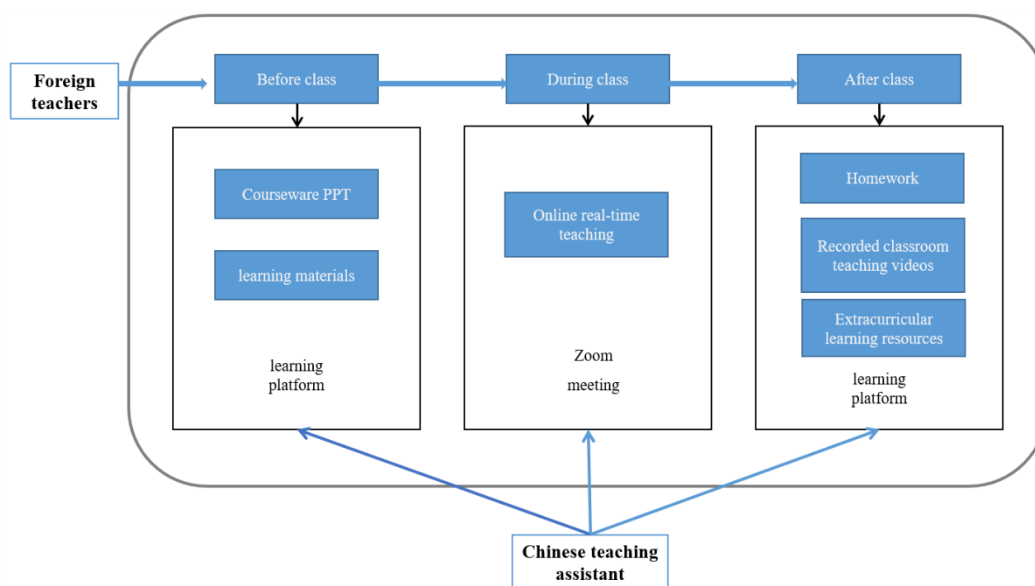

Figure 1. The "3+1" teaching model for British professional courses

This project will fully utilize the functions of the Learning Pass platform and set assessment indicators for each stage. In the "before class" stage, the main focus is on tracking students' previewing habits and their reading of learning materials. During the "in-class" stage, student engagement is primarily measured. In the "after class" stage, the emphasis is on assessing students' homework completion and the quality of their work.

The "3+1" teaching model has been initially applied to online teaching of British professional courses during the COVID-19 pandemic, achieving certain results. Currently, the in-class stage primarily involves offline instruction by British teachers. To better develop course resources, explore the advantages and characteristics of the China-UK Joint Education Program, and understand students' learning effectiveness, a questionnaire survey was conducted to further analyze existing issues.

4. Survey results and analysis

Through comprehensive research and interviews with various stakeholders, the main framework of the survey questionnaire was determined to include four aspects: learning materials, learning content, teacher conditions, and student learning effectiveness. To ensure the validity and reliability of the questionnaire, two experienced teachers were invited to revise the structure, and six students were selected for a small-scale pilot test. After multiple revisions, the final questionnaire was formed. The survey targeted second and third-year students majoring in digital media technology in the China-UK Joint Education Program at Guangxi University of Finance and Economics. A total of 120 questionnaires were distributed, and 112 were returned, resulting in a recovery rate of 93.3%. All 112 returned questionnaires were valid, with an effective rate of 100%. Among the 112 surveyed students, 38 were third-year students and 74 were second-year students; 51 were male (45.54%) and 61 were female (54.46%).

4.1. Learning materials

Learning materials mainly included PowerPoint courseware created by teachers, recorded teaching videos, and textbooks. The survey found that students had a relatively high level of satisfaction with the learning materials (**Figure 2**). The proportion of "quite satisfied" and above was 58.92%, while "neutral" accounted for 39.29%, and "dissatisfied" accounted for 1.78%. The main reason for dissatisfaction was that the fully English learning materials posed significant learning pressure on students with weaker English skills.
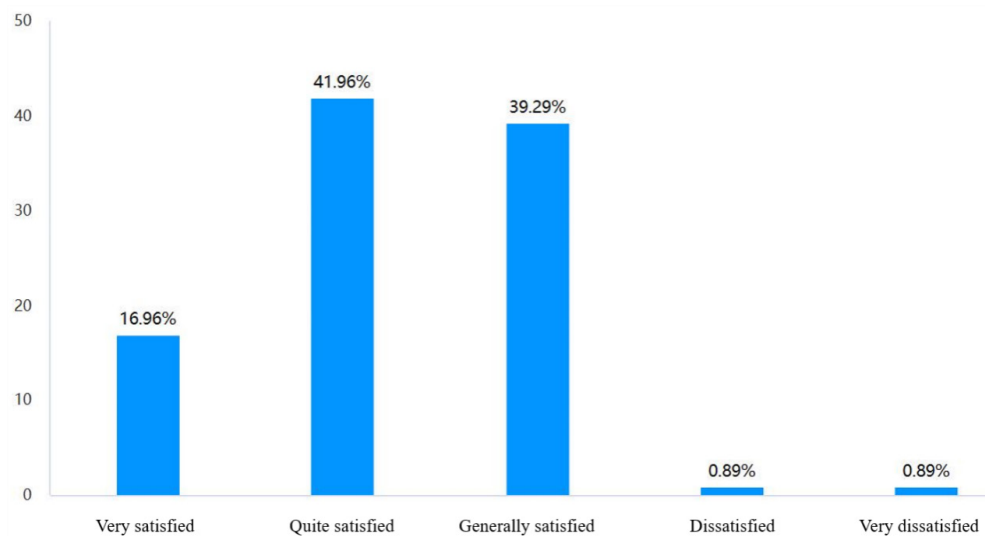

Figure 2. Student satisfaction with learning materials

In addition, the statistical results for "whether learning materials are helpful for students' learning" (**Figure 3**) indicate that the proportion of "not helpful" is only 6.25%. This suggests that the learning materials have met the learning needs of most students.
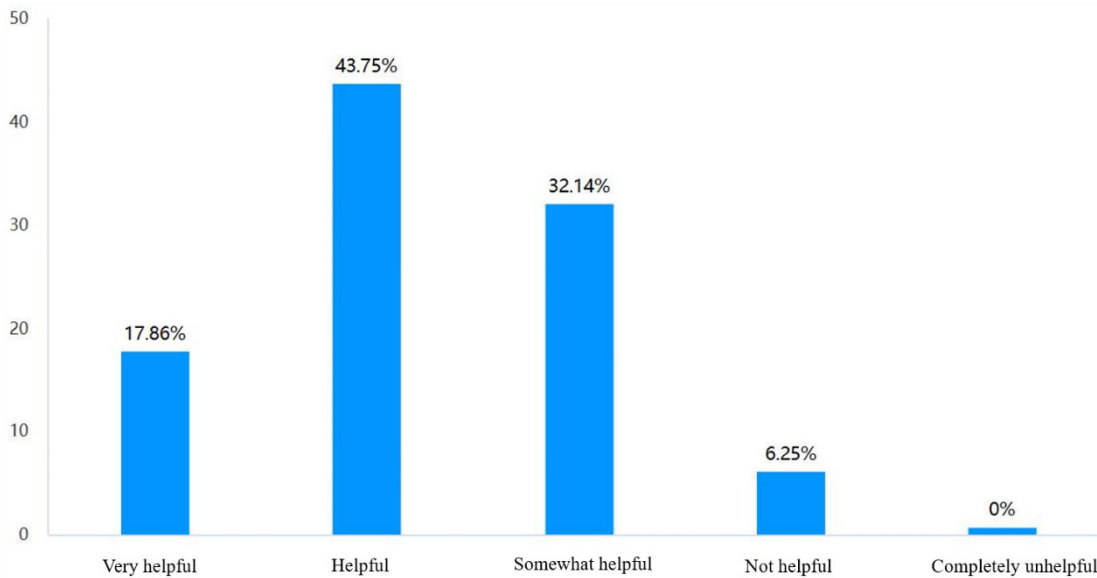

Figure 3. Statistics on whether learning materials are helpful

4.2. Learning content

The investigation and analysis of learning content mainly focus on several aspects, including the content quality of teaching videos, the interaction between online courses and students, whether online courses provide practical opportunities, and the difficulty of learning content.

Regarding the content quality of teaching videos, student feedback varies significantly (**Figure 4**). The sum of the proportions of "good" and "very good" is 58.04%, while "average" accounts for 37.5%, and there is even a 4.46% rating of "poor." The main reason for this is that most of the teaching videos are direct recordings of British teachers' classroom teaching, without any post-production improvements. Therefore, to develop online courses, it is necessary to consider and design the courses holistically, conduct professional recordings, and edit the videos in post-production to better create high-quality teaching videos that serve students.
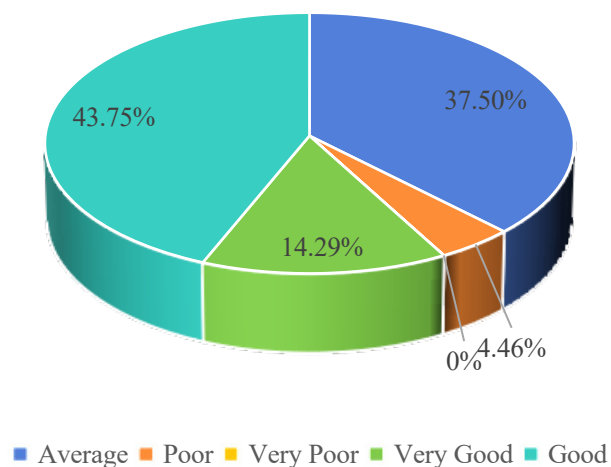

Figure 4. Content quality of teaching videos

For "interaction between online courses and students" and "whether online courses provide practical opportunities," student feedback was relatively consistent, with both aspects receiving ratings above 91%.

Regarding "whether students can adapt to the difficulty level of the current learning content," it reflects the varying levels of learning ability among students (**Figure 5**). The proportion of students who can "adapt" is 41.07%, while those who are "very adapted" account for 11.61%. However, 11.61% of students indicated they are "not adapted." Therefore, when considering the difficulty level of teaching content, it is essential to take into account not only the richness of the content but also the students' adaptability. The teaching content of professional courses is relatively challenging, and further research is needed on how students can learn effectively.
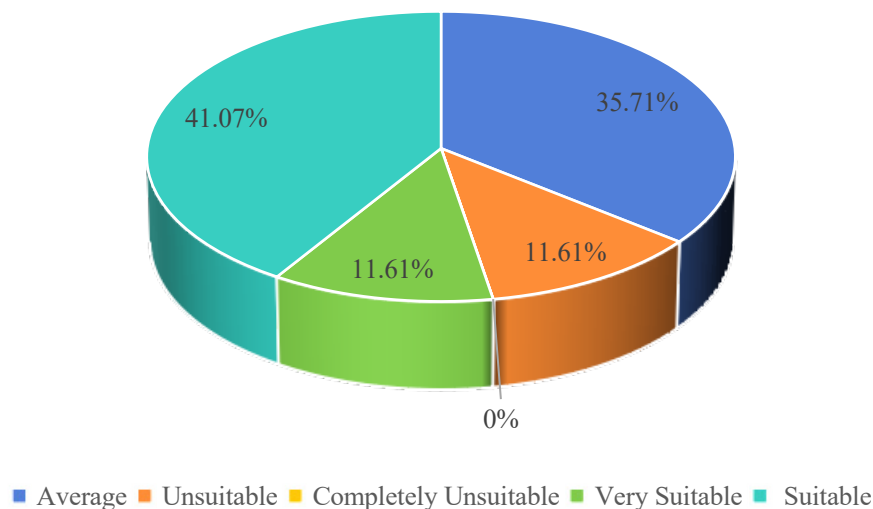

Figure 5. Difficulty level of learning content

4.3. Teacher conditions

To better understand students' attitudes towards teachers, research was conducted on aspects such as satisfaction with teachers' professional teaching level, teachers' online teaching performance, and satisfaction with teachers' English teaching ability.

Firstly, regarding students' satisfaction with teachers' professional teaching level, 22.32% were "very satisfied," 49.11% were "fairly satisfied," and 27.68% rated it as "average." This reflects the high professional teaching level of the British teachers involved in the project, aligning with the project's goal of introducing high-quality educational resources from abroad. British teachers possess rich professional skills in the digital media field and extensive frontline practical experience, making them highly popular among students.

Secondly, in terms of teachers' online teaching performance, when asked if teachers can clearly convey teaching content during online classes, 15.18% responded "always," 47.32% said "often," and 33.04% chose "sometimes." This indicates that British teachers are generally able to communicate the teaching content clearly. However, there are significant differences in teaching styles between British and Chinese teachers, causing some students to struggle with adaptation initially. This is reflected in teachers' classroom feedback, where the combined percentage of "often" and "always" responding to students' questions and doubts is 83.93%.

Lastly, a survey was conducted on students' satisfaction with teachers' English teaching ability. Regarding satisfaction with foreign teachers' English teaching ability, 25.89% were "very satisfied," 49.11% were "fairly satisfied," 23.21% rated it as "average," 1.79% were "dissatisfied," and 0% were "very dissatisfied." It is worth noting that not all British teachers are from the UK, and teaching habits can be influenced by their geographical backgrounds.

4.4. Student learning effectiveness

To gain a specific understanding of students' learning effectiveness, research was conducted on several aspects, including students' participation in online classroom discussions, completion of assignments and tests, and utilization of online course resources for after-class review.

Regarding students' participation in online classroom discussions, 14.29% responded "always," 34.82% said "often," 45.54% chose "sometimes," 4.46% indicated "rarely," and 0.89% said "never." These data suggest that student participation in online classroom discussions is similar to traditional offline classrooms, with a certain proportion of active and engaged students.

In terms of completing assignments and tests, 68.75% of students responded "always," 22.32% said "often," and 8.39% chose "sometimes." This demonstrates that students are generally proactive in completing assignments and tests.

However, there is significant variation in students' utilization of online course resources for after-class review (**Figure 6**). Only 13.39% responded "always," while 46.43% chose "sometimes," 9.82% said "rarely," and 2.68% indicated "never." This reflects that most students do not timely review and consolidate their learning, and some students do not review at all.
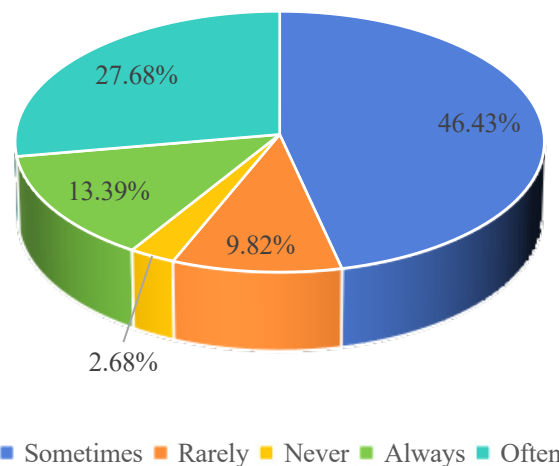

Figure 6. Students' utilization of online course resources for after-class review

Finally, a survey was also conducted on the overall gains students obtained from online learning courses (**Figure 7**). According to the statistical chart, 11.61% of students felt they had "very great" gains, 35.71% felt they had "great" gains, 48.21% rated their gains as "average," 3.57% felt they had "little" gains, and 0.89% felt they had "no gains." These statistical data indicate that there are still deficiencies in online courses that have not met students' needs.
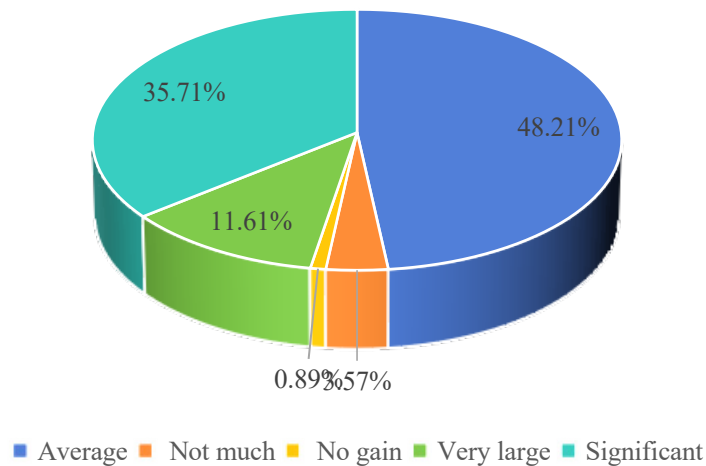
Figure 7. Overall gains from students' online learning

5. Conclusion and outlook

Through the statistical analysis of the survey results, we can observe the following: Firstly, in terms of learning materials, students have a relatively high level of satisfaction. However, as the China-UK Joint Education Program in Digital Media Technology major is a new program, there are still many issues in the construction of online courses offered by the British side. Secondly, regarding learning content, students are more concerned about the quality of teaching videos and the difficulty level of the content. The demand for professional knowledge among students is evident. Thirdly, in terms of teachers, students have a high level of satisfaction with the excellent teachers introduced, but some students cannot adapt to the teaching style of the British teachers. Fourthly, regarding student learning effectiveness, students are able to actively complete assignments and tests, but their participation in class is not as high, and after-class review is not timely. Due to the full English instruction, some students cannot keep up with the teaching progress. Moreover, many courses are being offered for the first time, so there are still deficiencies. This is precisely the purpose of conducting the survey.

Based on the above survey results and analysis, it has clearly reflected the learning effectiveness and existing problems of students in the China-UK Joint Education Program regarding the online courses offered by the British side. This provides significant help for future course construction and offers a reference for teacher recruitment in this project. With the development of new productive forces, new technologies such as mobile learning and high-quality online courses are being applied in the field of education. The China-UK Joint Education Program will conduct in-depth practical research in areas such as building higher-quality teaching resources, training British teachers, and enhancing students' after-class learning. By adopting diverse teaching methods, the project aims to promote the renewal of teachers' teaching philosophies and enhance students' learning effectiveness, thereby driving deep changes in university teaching methods and laying a solid foundation for the cultivation of international talents.

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